MEDICAL PROCEEDINGS

MEDIESE BYDRAES

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'n Suid-Afrikaanse Tydskrif vir die Bevordering van die Geneeskunde

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Medical Proceedings · Mediese Bydraes

Vol. 2 · No. 8 INDEX · INHOUD 7 July 1956 7 Julie

Pfizer

INTERNATIONAL

medical news bulletin

Current Developments in the Fields of Antibiotics, Hormones, Nutrition and Clinical Medicine

Prepared for Physicians by the Medical Department of Pfizer International, Inc., 25 Broad Street, New York 4, N.Y., U.S.A.

Vol. III, No. 6, 1956

ANTIBIOTIC NEWS AND NOTES

TERRAMYCIN®* INTRAMUSCULAR "IS BEST CHOICE OF TREATMENT FOR GONORRHEA in penicillin-sensitive patients," according to Goodloe and colleagues.[1] The percentage of "cures" was 74.5 in 59 patients with acute gonorrhea with a dosage of 200 mg. Terramycin Intramuscular, divided into 2 doses injected into each buttock.

ARGENTINA: TERRAMYCIN VAPORIZATIONS RECOMMENDED IN ACUTE RESPIRATORY CONDITIONS - Terramycin vaporizations were administered to 42 children with acute conditions of the respiratory tract. Weinstein[2] reports good results in 28 patients with acute bronchitis and in 2 with bronchoalveolitis. The treatment "unquestionably relieves" spasmodic bronchitis and is "definitely beneficial to whooping cough." The majority of patients received one daily vaporization of 500 mg. Terramycin diluted in 10 cc. of 75% propylene glycol, by means of an oronasal face mask.

TETRACYN®**SF† "EXTREMELY EFFECTIVE" IN PEDIATRIC INFECTIONS - An orally administered preparation containing "tetracycline and the vitamin mixture proposed by the National Research Council as a therapeutic adjuvant in conditions of stress" was "extremely effective" in 50 children with a variety of acute pharyngeal and respiratory tract infections, say Andelman and Nathan.[3] Treatment was continued until 2-3 days after the patients became afebrile; 5-6 days of therapy were usually sufficient. The authors find it significant that in addition to complete recovery, there were no complicating secondary infections. They feel that "vitamin replacement therapy was of value in hastening the convalescent period" in many cases.

INDIA: "DRAMATIC RESPONSE" TO DIHYDROSTREPTOMYCIN IN RHEUMATIC PERICARDITIS - Banerji[4] reports a "dramatic response" to dihydrostreptomycin in a patient with rheumatic pericarditis, after penicillin and salicylate treatment had failed. Daily

*Brand of oxytetracycline
**Brand of tetracycline
†Trademark for Pfizer-originated, vitamin-fortified antibiotics

injections of 1 Gm. dihydrostreptomycin, given for 20 days together with multivitamins, effected a steadily continued "improvement." In view of the "excellent results" obtained, author recommends that the use of dihydrostreptomycin be explored further in patients with rheumatic carditis refractory to other therapy.

PENICILLIN "SUITABLE" FOR STREPTOCOCCAL MASS PROPHYLAXIS - Studies at the U.S. Naval Training Center in Bainbridge, Md., suggest benzathine penicillin G may be a "suitable agent for mass prophylaxis" against infections due to group A beta-hemolytic streptococci. Brooks and Tilden[5] found that a single injection (600,000 U.) given to 624 carriers, elicited 597 negative cultures for at least one month thereafter. This according to the authors, "seems to indicate a period of protection of perhaps four to six weeks." They consider it "significant" that rheumatic fever did not occur in any treated recruit.

GERMANY: TETRACYN "EFFECTS A MORE RAPID CURE" IN DYSENTERY than sulfonamides, reports Schütze[6] in a comparative study between two groups of 40 patients each. In the Tetracyn group 35 were "cured" and 4 "conditionally cured." In the sulfonamide group 28 were "cured" and 3 "conditionally cured." "...Tetracyn effects a more rapid cure than the sulfonamide therapy used up to date...." "In addition to its quicker effectiveness, Tetracyn therapy is preferable to sulfonamides particularly because of its much greater tolerance."

NORWAY: TERRAMYCIN IN RESPIRATORY AND URINARY INFECTIONS - Terramycin given orally produced "good" results in 74 of 96 patients with infections of the respiratory, urinary, gastrointestinal and biliary tracts, the skin and subutaneous tissues (adenitis, phlebitis), reports Klǿvstad.[7] Dosage was 4 tablets daily, 250 mg. each, given generally for 4-5 days. The patients ranged in age from 10 to over 80 years.

GERMANY: A PENICILLIN-DIHYDROSTREPTOMYCIN COMBINATION* "can cure" various infections caused by a wide range of organisms, such as gonococci, staphylococci, streptococci, pneumococci, enterococci, coli, Friedländer's bacillus and S. pallida. Schubert[8] observed that 1,000,000 U. of the combination, given 1-3 times, elicited "complete inhibition" of etiologic agents. The antibiotic combination was also used with "good result" in 2 patients with primary and latent syphilis. "...this new combination is indicated not only for short term, but also, especially, for long-range therapy."

PANAMA: TETRACYCLINE IN NONSPECIFIC URETHRITIS - "Cure" was obtained in 27 of 37 patients with nonspecific urethritis after 16 to 48 tablets were administered for 4-12 days, reports Fabrega.[9] The author thought that "its low toxicity and wide bactericidal spectrum" might make it "an antibiotic par excellence" in the treatment of this disease.

FRANCE: "REMARKABLE" EFFECT OF CHEMOTHERAPY ON RENAL TUBERCULOSIS IN PREGNANCY - Chemotherapy had a "remarkable, even curative, effect on renal tuberculosis..." in 3 pregnant women, observe Aboulker and Muhlrad.[10] The treatment had no bearing on the course of pregnancy and induced no fetopathy. The women received a total of 63 Gm., 35 Gm., and 32 Gm. isoniazid each, after pregnancy periods of respectively 2 months, 4½ months (also 37 Gm. streptomycin and 110 Gm. PAS), and 5½ months (also 10 Gm. dihydrostreptomycin sulfate).

*Available from Pfizer as Combiotic®

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HORMONES

DELTACORTRIL®* "EXCELLENT" IN SEVERE ALLERGY - Johnston and Cazort[1] report the effectiveness of prednisolone in severe allergies. Of 201 patients with severe allergic diseases treated with 232 courses of the steroid, 148 showed "excellent" and 55 "good" results. In addition, "excellent" results were seen in 20 and "good" results in 4 of 25 patients with severe refractory ragweed hay fever.

ITALY: PREDNISOLONE, PREDNISONE REPORTS FROM ITALIAN UNIVERSITIES - Reports from the Universities of Milan, Naples, Pisa, Florence, and Genoa, from hospitals in Brescia and Novara, and from the National Institute for Social Service in Sondalo[2] unanimously attest to the therapeutic effectiveness and excellent tolerance of prednisolone and prednisone. Prednisone, specifically, was found to be beneficial and effective in mesenchymal neoplasia, malignant neoplasia, lymphogranuloma, leukemia and other hemopathies, Micheli syndrome, nephrotic syndromes, tubercular pleuritis, pemphigus and other dermatoses, histamine cephalalgia, cortisone-resistant ocular diseases, and in gynecologic complaints as well as in the pediatric field.

SWITZERLAND: FIRST SYMPOSIUM ON PREDNISONE IN SWITZERLAND - Clinicians participating in the first prednisone symposium[3] confirmed the "indisputable therapeutic value" of the steroid. Böni (U. of Zurich) discusses its "especially strong" anti-inflammatory and antirheumatic effect on 22 patients with progressive chronic polyarthritis. Alphonse (U. of Geneva) reports on the "effectiveness" of prednisone in 5 patients with lupus erythematosus disseminatus; the steroid was used in doses equal to or smaller than the usual amounts of cortisone. In comparing the effects of cortisone and prednisone on epidemic hepatitis, Koller and colleagues (Zurich) conclude that prednisone "is particularly well suited for the treatment of epidemic hepatitis." Daily doses of 30 mg. prednisone "seem to have the same effect as 200 mg. cortisone." A "surprising improvement of the general condition" is seen, appetite returns, and "it is possible to change more rapidly to a protective high-protein diet for the liver."

GERMANY: PREDNISOLONE, PREDNISONE THERAPEUTIC "ADVANCE" IN ADDISON'S DISEASE - Prednisolone and prednisone "... achieve subjectively and objectively a complete clearing of the manifestations of severe Addison's disease," states Overzier.[4] Three

*Brand of prednisolone in tablets, white, scored, 5mg. tablets, bottles of 10, 20 and 100; in the familiar Pfizer oval shape.

women treated orally with both steroids, as well as with high doses of vitamin C, showed subjective and objective improvement after 3-4 days. The author considers this "...an advance because controlled ambulatory treatment without dietary restrictions is possible for the patient...."

LOCAL HYDROCORTISONE "SUPERIOR" IN PERIARTICULAR PAIN - Hydrocortisone acetate injections into painful joints effected results "superior to those obtained by methods available prior to the advent of hydrocortisone," report Kilroy.[5] One or more injections (or infiltrations) of 25, 50 or 75 mg. hydrocortisone into the point of greatest tenderness produced "good" results in 36 of 48 patients with tendinitis of the musculocutaneous cuff; complete freedom of pain was felt within 36 to 48 hours. "Good" effects were also obtained in 12 of 21 patients with epicondylitis and in 5 of 6 patients with Quervain's disease. [See note (1) below.]

A report by Grewe[6] confirms the superiority of hydrocortisone in epicondylitis or styloiditis. Ninety per cent of 33 patients were free of complaints 3-6 months after therapy. Single injections of 25 mg. hydrocortisone acetate were usually sufficient to alleviate the pain. "Excellent results were also seen in the treatment of bursitis."

NOTE (1): Available as Cortril® Acetate Aqueous Suspension containing 25 mg. hydrocortisone acetate per cc.

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EDITORIAL · REDAKSIONEEL

MEDICAL PROCEEDINGS

A FORTNIGHTLY JOURNAL

With this issue *Medical Proceedings* celebrates its first birthday by becoming a fortnightly publication. This has been determined by the truly remarkable support it has received in every respect necessary for successful clinical journalism.

Most of us harbour a Caxtonian curiosity about the techniques of printing. Our readers will, therefore, probably be interested to learn that the cover of the Journal is printed by Verkotype. This produces the decorative, raised type which graces the Journal cover. A solution of many technical, mass production and aesthetic problems made the adoption of this process possible.

The Journal will now also have opportunities to comment more topically on matters of current moment to the profession.

Despite a doubling of its publication frequency, the yearly subscription will remain unaltered at one guinea.

MEDIESE BYDRAES

'N TWEEWEEKLIKSE BLAD

Met hierdie uitgawe vier *Mediese Bydraes* sy eerste verjaardag deur 'n tweeweeklikse blad te word. Dit is die regstreekse gevolg van die werklik merkwaardige steun wat dit ontvang het in iederesfeer wat vir suksesvolle kliniese joernalistiek noodsaaklik is.

By die meeste van ons bestaan daar 'n Caxtoniaanse nuuskierigheid oor die tegniek van die drukkerskuns. Ons lesers sal derhalwe waarskynlik belang stel in die feit dat die omslag van hierdie Tydskrif in *Verkotype* gedruk is. Dit gee ons die dekoratiewe, verhewe lettersoort wat ons voorblad tans versier. 'n Oplossing van talle tegniese, massaproduksie- en estetiese probleme het die toepassing van hierdie tegniek moontlik gemaak.

Die Tydskrif sal nou ook geleentheid kry om meer aktuele kommentaar uit te oefen op aangeleenthede wat die aandag van die professie in beslag neem.

Ondanks die verdubelling van die publikasiefrekwensie bly die jaarlikse intekengeld onveranderd op een ghienie staan.

ELECTROCARDIOGRAPHY WITHOUT TEARS

It is clear from the numerous communications we have received that the recent series of articles in this Journal by Dr. L. Schamroth successfully introduced many practitioners to the principles of unipolar electrocardiography by means of one of the simplest and most instructive accounts available.

Dr. Schamroth achieved a unique success in combining simplicity with accuracy. The functional illustrations contributed considerably to the success of the exposition.

The interest in and the demand for Dr. Schamroth's articles have been so great that

ELEKTROKARDIOGRAFIE SONDER TRANE

Uit die talle mededelings wat ons ontvang het, blyk duidelik dat die reeks artikels deur dr. L. Schamroth wat onlangs in hierdie Tydskrif verskyn het, die beginsels van eenpolige elektrokradiografie op 'n hoogs geslaagde en tog eenvoudige en leersame manier onder die aandag van mediese praktisyns gebring het.

Dr. Schamroth het unieke welslae behaal deur eenvoud met akkuraatheid te verenig. Die funksionele illustrasies het heelwat tot die sukses van die uiteensetting bygedra.

Die belangstelling in en die aanvraag om dr. Schamroth se artikels was so groot dat die

the author has included the material which appeared in this Journal in a monograph which has just been published.*

The principles outlined in the earlier chapters published in this Journal are applied to an understanding of the disorders of cardiac rhythm, as recorded in the electrocardiogram. Self-explanatory diagrams once again characterize the new material in the book and the publisher's claim that no specialized knowledge is needed for an understanding of this account of electrocardiography can be endorsed without reservation.

The volume should be invaluable to undergraduate students. It provides practising doctors with a satisfactory and intelligible introduction to what is generally found to be a complex and difficult subject.

skrywer die stof wat in hierdie Tydskrif verskyn het, in 'n monograaf saamgevat het. Dit is so pas gepubliseer.*

Die beginsels, uiteengesit in die vroeëre hoofstukke soos in hierdie Tydskrif gepubliseer, word toegepas op 'n begrip van die versteurings van die hartritme, soos in die elektrokardiogram aangeteken. 'n Kenmerk van die nuwe materiaal in die boek is weer eens selfverduidelikende tekeninge, en die uitgewer se aanspraak dat geen gespesialiseerde kennis nodig is vir 'n begrip van hierdie uiteensetting van elektrokardiografie nie, kan sonder enige voorbehoude beaam word.

Hierdie boekie sal van onskatbare waarde vir ongegradueerdes wees. Dit voorsien praktiserende geneeshere van 'n bevredigende en verstaanbare inleiding tot 'n onderwerp wat allerweë as ingewikkeld en moeilik beskou word.

HIGHER QUALIFICATIONS

FOR THE REGISTRATION OF SPECIALISTS

At its meeting in March 1956, in accepting a new list of higher qualifications for the registration of specialities, the Council adopted a new principle. The effect is to entitle a medical practitioner who holds a higher qualification in medicine or in surgery (e.g. the M.D., the M.R.C.P. (Lond.), or the F.R.C.S., Eng. or Edin.) to have this qualification registered as the higher qualification required for registration in one or other of the special branches of medicine, e.g. pathology, dermatology, ophthalmology, orthopaedics, etc. An M.R.C.P. or an F.R.C.S. will, e.g. now entitle a practitioner to be registered as a specialist in ophthalmology provided that he complies with the other requirements, which include a period of training in an approved teaching department of ophthalmology.

In the case of obstetrics and gynaecology, qualifications such as a Fellowship in Surgery will only be accepted if obstetrics and gynaecology were taken as a special subject.

HOËR KWALIFIKASIES

VIR DIE REGISTRASIE VAN SPESIALITEITE

Op sy vergadering in Maart 1956 het die Raad 'n nuwe beginsel neergelê toe hy 'n nuwe lys van hoër kwalifikasies vir die registrasie van spesialiteite aanvaar het. Ten gevolge daarvan sal 'n mediese praktisyn wat in besit is van 'n hoër kwalifikasie in die geneeskunde of in die chirurgie (bv. die M.D., die M.R.C.P. (Lond.) of die F.R.C.S., Eng. of Edin.) geregtig wees om hierdie kwalifikasie te laat registreer as die hoër kwalifikasie wat vereis word vir registrasie in die een of ander spesiale vertakking van die geneeskunde, bv. patologie, dermatologie, oftalmologie, ortopedie, ens. 'n M.R.C.P. of 'n F.R.C.S. sal 'n praktisyn, bv. voortaan geregtig maak om hom as 'n spesialis in oftalmologie te laat registreer mits hy ook aan die ander vereistes voldoen—onder meer 'n opleidingstydperk in 'n goedgekeurde onderrigafdeling vir oftalmologie.

In die geval van verloskunde en ginekologie sal kwalifikasies soos 'n Genootskap in Chirurgie alleen aanvaar word indien die verloskunde en ginekologie as 'n spesiale onderwerp bestudeer is.

TREATMENT AND CARE OF CANCER PATIENTS

PROGRAMME OF THE NATIONAL CANCER ASSOCIATION OF SOUTH AFRICA

The aims of the National Cancer Association of South Africa include assistance in developing services for the diagnosis and treatment

BEHANDELING EN VERSORGING VAN KANKERPASIËNTE

PROGRAM VAN DIE NASIONALE KANKERVERENIGING VAN SUID-AFRIKA

Die oogmerke van die Nasionale Kankervereniging van Suid-Afrika behels ondermeer die verlening van bystand aan publieke hospitale

* *An Introduction to Electrocardiography.* By Dr. L. Schamroth. (1956. Pp. 60 + xi. 106 Illustrations. 21s.). Cape Town: Juta & Company Ltd.

* *An Introduction to Electrocardiography.* Deur dr. L. Schamroth. (1956. 60 bl. + xi. 106 illustrasies. 21s.). Kaapstad: Juta & Kie., Bpk.

of cancer in all public hospitals in the Union. Members of the medical profession are in a key position to help this praiseworthy objective by guiding the Cancer Association in their task.

The Cancer Association is conducting a survey of existing facilities for diagnosis and the various forms of treatment, and has invited the profession to supply relevant data, as well as to recommend ways of dealing with such problems as inoperable cases, special nursing services, financial aid to clients and their families, etc.

Practitioners who answer the questionnaire recently sent out by the National Cancer Association will assist materially in advancing some of the most important aspects of the diagnosis, treatment and management of malignant disease.

in die Unie met die ontwikkeling van dienste vir die diagnose en behandeling van kanker. Lede van die mediese beroep is by uitstek in 'n posisie om hulp te verleen met hierdie prysenswaardige doel deur aan die Kankervereniging leiding in hulle taak te gee.

Die Kankervereniging is besig met 'n opname van bestaande geriewe vir diagnose en die verskillende vorms van behandeling en het die mediese beroep uitgenooi om toepaslike gegewens te verstrek, sowel as om maniere aan te beveel waarop probleme soos karsinoomgevalle wat nie geopereer kan word nie, spesiale verpleegdienste, finansiële bystand vir pasiënte en hulle gesinne ens., aangepak kan word.

Praktisyns wat die vraelys wat onlangs deur die Kankervereniging uitgestuur is, beantwoord, sal op tasbare wyse bydra tot die bevordering van sommige van die belangrikste aspekte van die diagnose, behandeling en beheer van kanker.

THE MODERN TREATMENT OF HYPERTENSION

A REVIEW OF THE NEW ANTIHYPERTENSIVE DRUGS

L. KORNEL, M.D.*

Medical Outpatient Department 'C', Rothschild Hadassah University Hospital, Jerusalem, Israel

Hypertension with all its more or less dangerous complications is one of the most common diseases of our century. The rapid development and progress of technique connected with the enormous rise in the tempo of life and the intensity of work, permanent tension in office and home and actual lack of psychic relaxation, are all apparently the most important factors responsible for having made hypertensive disease a true plague of modern society. Many efforts have been made during the last few years to find an effective drug against all forms of hypertension.

In view of the multiple causes of hypertension no single drug is likely to be the solution to the therapeutic problem. Psychoneurogenic, cardiovascular, endocrine and renal factors are involved, often apparently on an hereditary basis. Therefore, in the treatment of hypertension the influence of the environment, the diet and the mind must be considered. In spite of all efforts to influence these factors, very little can be done to stop the development of hypertensive disease or to prevent dangerous complications. The new hypotensive drugs which have lately appeared seem to introduce a new era in the treatment of hypertension and probably mean the beginning of a real success in the fight against hypertensive diseases.

Drugs of this type which call for special attention are: Hexamethonium, Veriloid, Apresoline and Rauwolfia. We intend to describe each of them briefly: their pharmacology, mode of action, clinical use with results obtained and chiefly their application in the case of outpatients continuing their daily activities.

HEXAMETHONIUM AND SIMILAR COMPOUNDS

The production of neurogenic hypertension in experimental animals by surgical procedures (Grimson 1950) suggesting the probability of a nervous factor in the etiology of human hypertension, has focused attention on the use of adrenergic blocking agents in the treatment of this disease. Since the results obtained with the first adrenergic blocking drugs (Priscoline, T.E.A.B.) were not satisfactory, the next step was made with the introduction of hexamethonium bromide by Paton and Zaimis (1949, 1951) as a substance which

* British Council Research Scholar, at present at the Department of Medicine, Queen Elizabeth Hospital, Birmingham, England.

blocks the transmission of nervous impulses across the synapses of autonomic ganglia.

Its structural formula is shown in Fig. 1.

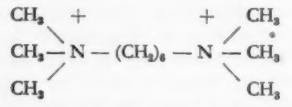

Fig. 1. Hexamethylene—1, 6—bistrimethylammonium.

Its action is not only sympathicolytic but also vagolytic, the latter being one of the disadvantages of this compond.

Many reports and publications have appeared about the clinical use and effectiveness of hexamethonium in the treatment of hypertension. It seems to be an established fact that its benefit in hospitalized patients using the drug intravenously or subcutaneously is quite certain (repeated doses of 25-50 mg.) and the results obtained in the control of hypertension are impressive, but the oral management gives rather disappointing results. The oral dose must be much greater than that given by injections (125-500 mg. per dose repeated every 6-7 hours) and the results vary from day to day, probably due to uneven and inadequate absorption from the gastro-intestinal tract.

'Control of blood pressure with oral hexamethonium is unsatisfactory in most cases and oral treatment might well be reserved for those cases with severe headaches but without objective evidence of vascular degeneration. . . . Morrison and also Smirk and Alstad have shown that adequate control of blood pressure even in severe cases can be obtained with parenteral hexamethonium, but the difficulties in controlling this method of treatment with a potentially dangerous drug are such as to limit its general use' (*British Medical Journal,* 1953, **1,** 1319). Great care should be taken when complications exist—impaired renal function, coronary artery disease and existing or threatened cerebral vascular accidents.

The commonest of the undesirable effects is postural hypotension with all its accompanying symptoms; also blurred vision, due to pupillary dilatation, unpleasant sensations like dryness of the mouth, nausea, vomiting, drowsiness and constipation. Paralytic ileus may develop, but rarely, and complaints of transient impotence or loss of ejaculatory power are not uncommon. Tolerance to the drug may develop rapidly, making large doses for continuous treatment necessary.

All these circumstances have stimulated the search for other ganglion-blocking drugs which would obviate the difficulties and disadvantages of hexamethonium, especially in oral treatment. Recently, a few articles have appeared attempting to estimate and compare the effectiveness of new sympathicolytic agents of the methonium series. Particular attention should be paid to phenyldimethonium and pentapyrrolidinium, which seem to overcome some of the disadvantages of hexamethonium. Further research is required.

VERILOID AND OTHER VERATRUM PREPARATIONS

The plants *Veratrum viride* and *Veratrum album* were already known 80 years ago for their hypotensive action, but because of their severe toxicity they could not be used in practice. In the last few years many attempts have been made to obtain extracts of these plants free from their toxic side effects.

Veriloid* is the purified, biologically standardized extract of alkaloids of *Veratrum viride.* This extract is itself a mixture of several alkaloids amongst which the most active are protoveratrine, germerine and cryptenamine. Its effect is the result of its action on at least 2 different sites in the body:

1. A stimulatory effect on afferent vagal nerve endings in the wall of the left ventricle with reflex action on the efferent vagal fibres resulting in bradycardia. This bradycardia may be inhibited by atropine or vagotomy (von Bezold reflex, 1867).

2. A direct central action independent of vagal stimulation, shown by perfusion of the isolated head in cross-circulation experiments in the dog (Stutzman, 1951). This action is unaffected by atropine or bilateral vagotomy. Apart from this, certain of the veratrum alkaloids have a cardiotonic effect on the failing mammalian heart, like the cardiac glycosides, increasing its efficiency, work performance and oxygen consumption.

Veriloid has been used recently in the treatment of hypertensive diseases and many reports and publications have appeared during the last 3 years indicating its high effectiveness in the control of hypertension, especially its malignant form. Good results have been obtained by parenteral as well as by oral administration. The latter method permits wide application of Veriloid in the treatment of outpatients continuing their daily activities and work. Unfortunately this drug, too, may

* Produced by the Riker Laboratories.

cause toxic symptoms and great care must be taken in the adjustment of the dosage, reserving a strong individual approach for each patient. The excessive fall of blood pressure may even lead to collapse. Ephedrine *per os* or subcutaneously was found to be an effective antidote and this fact considerably diminishes the aforementioned dangerous disadvantage. The main toxic effects are a feeling of weakness and drowsiness, nausea and vomiting. The limits between the toxic and the effective but non-toxic doses are very narrow and this calls for precise and cautious dosage adjustment.

Our personal experience showed that in a very high percentage of cases the appropriate dosage can be obtained by:

1. Cautious adjustment of an optimal single dose (intake of the drug followed by ½-hourly or hourly measurement of the blood pressure, allowing the peak of action to be determined and consequently the time of absorption and the excretion of Veriloid);

2. Optimal spacing of further doses during the day. This very exact titration easily helps to find the dose between these limits mentioned above. Moreover, we are convinced that some of the reported disappointing results are due to inexact dosage adjustment. The average interval between 2 orally administered doses is 5-6 hours and the daily dose varies considerably from 6-20 mg. and even more. A significant fall in both the systolic and the diastolic pressures is noticeable and the subjective and objective symptoms improve quickly. Tolerance to the drug has not been noted even during quite prolonged treatment.

The parenteral use of Veriloid finds its proper application in hospitalized patients, especially in pre-eclampsia and eclampsia gravidarum. The same purified extract of a mixture of alkaloids of *Veratrum viride* is represented by Veradine.*

Among the other veratrum preparations should be mentioned the pure crystalline simple alkaloid of veratrum-protoveratrine. This is a very potent hypotensive agent, but owing to its very low emetic : therapeutic ratio (1 : 1) it cannot find wide application. Cryptenamine† has been announced as the only isolated veratrum alkaloid preparation with 4 times the range of therapeutic safety, but so far very little has been reported about it.

* The product of Teva Middle East Pharmaceutical and Chemical Works Ltd., Jerusalem, Israel.

† Unitensen of Irvin Neisler Co., U.S.A.

APRESOLINE

This drug is the derivative of phthalazine. Its structural formula is shown in Fig. 2.

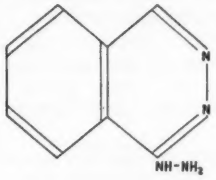

Fig. 2. l-hydrazinophthalazine.

One of the first who studied its pharmacological properties and actions was Schroeder who was able to block the pressor action of pherentasin with this compound. According to his reports and those of other investigators (Freis, Gross, Meier, Moyer and others) the hypotensive response to Apresoline is due to 3 mechanisms:

1. *The central action.* Experimental evidence indicates its chief locus to be in the midbrain, preventing an excessive outflow of sympathetic vasopressor impulses.

2. *Moderate adrenergic blockade* by inhibiting the pressor action of nor-epinephrine and epinephrine.

3. *Antagonistic action against hypertensive substances* considered to be of basic importance in various forms of hypertension: angiotonin (hypertensin), serotonin and pherentasin.

The most significant pharmacological actions of Apresoline are the increase in renal blood flow and the inhibition of cerebral hormonal vasopressor substances. Both actions are highly desirable in the therapy of hypertensive disease. No other substance is known to have such an effect on the cerebral pressor substances, and this is believed to explain the effectiveness of hydrazinophthalazine in patients who have neurogenic hypertension and have failed to benefit from extensive lumbodorsal sympathectomy.

The increase in renal blood flow is due to a decrease in resistance in the renal vascular bed. This, however, does not increase renal function and there is no reason to expect that therapy with this drug will reverse renal failure.

The toxicity of Apresoline has been reported to be quite low. The chief side effects are tachycardia and headaches which may occur at the beginning, but usually disappear in the course of the treatment. Further,

nausea and vomiting, which are uncommon toxic manifestations, may occur, in which case the drug must often be discontinued. The only effective means for overcoming this intolerance is to start with very small doses and increase the amount slowly. Overdosage with Apresoline represents no problem in practice. Both in Man and in experimental animals there is a 'floor' below which blood pressure will not drop despite increasing doses.

Apresoline is available for oral or parenteral use, but its chief and only practical application in prolonged treatment is oral. The dosage schedule should be adjusted to the individual response. It may take 8 weeks or more to obtain optimal benefit. The usual initial dose is 10 or 25 mg. which has to be repeated 4-6 times daily. This dosage should be increased every week till the optimal hypotensive response occurs or the appearance of side effects permits no further dosage increase.

Some patients, after more or less protracted administration, begin to show a tendency to tolerate the drug. This tolerance may be lessened by a due spacing of doses and disappears rather rapidly upon temporary withdrawal of the drug.

l-Hydrazinophthalazine is most effective in hypertension persisting or recurring after sympathectomy. The drug gives also favourable results in benign uncomplicated and early malignant hypertension. When renal damage is advanced, as in chronic renal hypertension and chronic glomerulo-nephritis, the value of Apresoline is considerably diminished.

RAUWOLFIA SERPENTINA

The extracts of the root of the plant *Rauwolfia serpentina,* found chiefly in India and Malaya, have been used in these countries for centuries as a general sedative, as an antidote for the poison of insects and reptiles and as a stimulant to uterine contractions.

Recently this plant has attracted the attention of research workers because of its hypotensive action.

The first purified extracts of total alkaloids of Rauwolfia appeared under the name Rauviloid* and Raudixin;† then the most potent separate alkaloids were isolated (Serpasil).‡ Now several preparations under various names are obtainable.

Early research on the root showed that it contained 2 groups of alkaloids—the ajmaline group and the serpentine group. Its action is chiefly central (on the vasomotor centre), causing generalized vasodilatation resulting in a lowering of blood pressure. General sedation which appears and the feeling of well-being are thought to be very desirable effects.

The hypotensive action of this drug is of moderate intensity and it seems to be the medication of choice in mild hypertension, especially effective in young, labile (neurotic) hypertensive patients without advanced vascular changes. This preparation does not produce undesirable side effects even when given in excessive amounts. Only in a very low percentage of cases were a few mild toxic symptoms described: excessive drowsiness, lassitude, anorexia and nausea, which cease quickly after withdrawal of the drug.

Rauwolfia is given orally. Although the dosage must be individualized, most patients require 4-8 mg. of purified total alkaloids daily, divided into 2-4 doses. The drug has to be taken after meals. The maximum hypotensive effect is generally reached within a week after the beginning of treatment.

When given in conjunction with Veratrum or Pentapyrrolidinium in severe hypertension, the concurrent administration of the 2 drugs effects a response which may well be greater than the sum of the effects of the 2 drugs if given separately. This may indicate the synergistic potentiation which permits the application of relatively smaller doses of both.

Unfortunately, none of the foregoing drugs can be considered the perfect remedy for hypertensive disease, and it should be stressed that no satisfactory studies have yet been made on the combined use of the different drugs, although the few reports which have appeared on Apresoline-Hexamethonium and Rauwiloid-Veriloid combinations promise rather encouraging results.

ADDENDUM

Since the preparation of this paper a few reports have appeared, drawing attention to some recently discovered properties of the *l*-hydrazinophthalazine and the Rauwolfia drugs, which could limit their use in certain circumstances:

1. Suggestive evidence is presented by Aitchison *et al.* (Brit. Heart J., 1955, *17*, 425) that Apresoline causes elevation of the pulmonary arterial pressure and an increase in the cardiac output (simultaneously with the fall in the systemic pressure) in patients with mitral disease. Consequently, when used in cases of hypertension associated with mitral

* Riker Laboratories, Inc.
† Squibb.
‡ Ciba Ltd.

disease, it may aggravate the symptoms of cardiac failure, increasing the load on the right ventricle, or even cause pulmonary oedema.

2. The possible anti-diuretic effect of the Rauwolfia alkaloids, finding its expression in the rapid gain in weight of patients while on treatment, has been studied by McGregor and Segal (Brit. Heart J., 1955, *17*, 391). Congestive heart failure may be precipitated in cases with previous myocardial damage, due to fluid retention. Further observations are required.

OPSOMMING

Die veelvoudige oorsake van hipertensie maak dit onwaarskynlik dat enige enkele middel die terapeutiese probleem sal oplos. By die behandeling van hipertensie moet die invloed van omgewing, dieet en die geestesgesteldheid van die pasiënt in oorweging geneem word.

Die nuwe hipotensiemiddels wat in die jongste tyd beskikbaar gestel is, het 'n nuwe tydperk ingelui vir sover dit die behandeling van hipertensie betref.

Die middels van hierdie aard wat spesiale aandag verdien, is: Heksametonium, Veriloid, Apresoline en Rauwolfia.

Die farmakologie, die werkingsmanier, die kliniese gebruik van en die resultate wat verkry is met hierdie middels word in oënskou geneem, veral wat betref die behandeling van buitepasiënte wat hul gewone daaglikse werksaamhede voortsit.

Die oorsig word afgesluit met 'n besonder volledige bibliografie.

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DYSPHAGIA

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Dysphagia or difficulty in swallowing may result from organic or functional conditions arising anywhere along the pathway from the mouth to the stomach.

Swallowing is initiated when chewed food leaves the mouth and is terminated when it enters the stomach.

THE SWALLOWING MECHANISM

Foods which have been chewed, and fluids, are guided to the back of the mouth by the tongue and the facial muscles, thence to the pharynx. The naso-pharynx is closed off by the palatal muscles so that food will not regurgitate through the nose, and the glottis is occluded to prevent the food and fluid entering the trachea. Finally the victuals are forced into the oesophagus by the constrictor muscles.

It should be understood clearly that the oesophagus is not merely an inert channel through which food passes, but is in fact an actively constricting and propelling muscular organ. Carefully regulated peristalsis occurs along the entire 10 inches of its adult length up to the point where it finally passes through the diaphragmatic hiatus into the fundus of the stomach.

Inco-ordination of this neuro-muscular mechanism may thus interfere with the swallowing process at any site from the pharyngeal region to the oesophago-gastric junction. If peristalsis is lost, the oesophagus may merely become a channel through which the food drops. If lower sphincteric action is lost, the stomach contents may regurgitate into the oesophagus by anti-peristaltic waves.

The oesophagus is in close relationship to many structures along its course, and abnormalities affecting any of these may interfere with the act of swallowing. The oesophagus

may be pulled or pushed out of place or it may be attacked by any of the lesions which commonly affect hollow muscular viscera.

ETIOLOGY OF DYSPHAGIA

A. LESIONS OF THE PHARYNX

1. *Inflammatory Changes.* Difficulty in swallowing is most frequently caused by an inflammatory lesion such as tonsillitis or pharyngitis. The throat is not only sore, but swallowing itself may be a painful effort. Despite the pain, there is no hold-up of the food.

2. *Paralysis of Muscles.* The muscles of the pharynx must work in a co-ordinated manner in order to receive the bolus of food, close off the naso-pharynx and the larynx and subsequently force the food through the upper opening of the oesophagus. Diphtheritic paralysis of the muscles of the soft palate will interfere with this action. Food, particularly fluids, will then frequently regurgitate through the nose when swallowing is attempted.

Bulbar paralysis complicating poliomyelitis results in an even more extensive muscular weakness, with complete failure of the swallowing mechanism. Fluids enter the glottis and pass into the trachea. Invariably other muscle paralyses are present so that not only is swallowing impossible, but there is an associated loss of the cough reflex.

Myasthenia gravis may be associated with dysphagia, due to actual muscle weakness.

3. *Anaemia.* The dysphagia due to anaemia (as seen in the Plummer-Vinson syndrome) follows on the muscular inco-ordination which affects the upper part of the oesophagus and pharynx.

4. *Pharyngeal Diverticulum.* This results from a weakness between the transverse and oblique fibres of the inferior constrictor muscle of the pharynx. The mucous membrane bulges posteriorly and a sac is formed, which eventually enlarges with a pocketing of food within. This is a hernia and is of quite frequent occurrence (Fig. 1).

5. *Hysteria.* Hysteria may simulate any of these dysphagic patterns. The patient states that swallowing is impossible and often complains of an obstructing lump in the throat—the so-called globus hystericus.

B. LESIONS OF THE UPPER OESOPHAGUS

1. *Foreign Bodies.* The posterior wall of the upper part of the oesophagus seems to be almost the site of election for the impaction of fish bones. Dysphagia occurs immediately and dramatically. The individual is usually aware that he has swallowed a bone and every subsequent swallowing movement is painful. It is well known that an abrasion or tear of the mucous membrane of the oesophagus originally produced by the foreign body may lead the patient to insist that the bone is still impacted in his throat (Fig. 2).

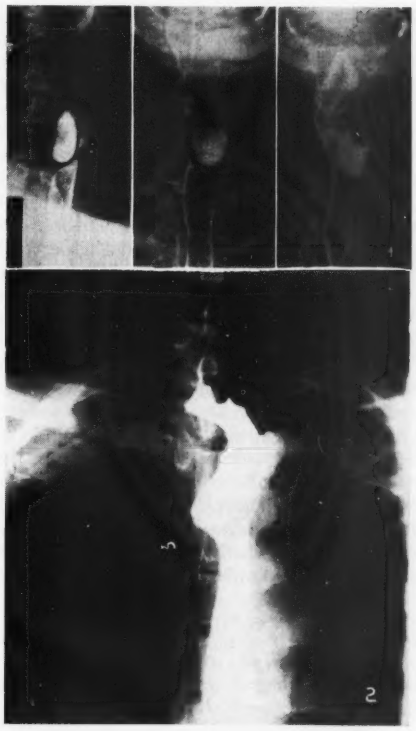

Fig. 1. Three views of a pharyngeal pouch. These show the posterior position and the overhanging pouch causing some compression of the oesophagus.

Fig. 2. An upper denture impacted in the upper oesophagus. The patient was admitted in a very toxic state with severe pain, high temperature and subcutaneous emphysema of the neck.

2. *Pressure from Outside.* Compression and constriction of the neck structures by an enlarging thyroid gland may produce a difficulty in swallowing of gradual onset. Occasionally a thyroid adenoma becomes impacted in the superior mediastinum and the dysphagia commences abruptly. This presupposes considerable pressure and therefore it is not surprising to find a concomitant dyspnoea. The thyroid may not appear enlarged and it may

be very difficult to detect the presence of a plunging goitre which has become obstructed behind the upper part of the manubrium sterni. Similarly, an aortic aneurysm or the osteophytic outgrowths associated with cervical vertebral osteo-arthritis may cause dysphagia through pressure on the upper end of the oesophagus.

3. *Corrosives.* The swallowing of corrosives (e.g. caustic soda or even strong acids) affects not only the mouth, but often the upper part of the oesophagus. The mouth and lips may evidence corrosive effects. If a large amount of the poison has been swallowed the entire length of the oesophagus may be burnt.

4. *Carcinoma.* Carcinoma of the upper part of the oesophagus usually obstructs the lumen of the oesophagus gradually, though a sudden complete occlusion may be caused by blockage due to a small piece of food. It is not the commonest site for the development of a carcinoma which, when it does attack this region, is of slow development, leading to impaired swallowing and finally, in the absence of treatment, only allowing the passage of fluids.

C. LESIONS OF THE MID-OESOPHAGUS

1. *Carcinoma.* The most frequently occurring mid-oesophageal lesion causing dysphagia is a carcinoma which may arise in the oesophagus itself or be an extension from the left main bronchus. The lesion usually occurs at the site of closest relationship between the aorta and oesophagus, i.e. where the arch of the aorta crosses the oesophagus.

2. *Pressure from Aneurysm.* The oesophagus is crossed by the aortic arch; thus any enlargement of this main vessel will obstruct it. Aneurysm of the arch of the aorta leads to symptoms not only attributable to the oesophageal obstruction, but also to paralysis of the recurrent laryngeal nerve as it hooks around the vessel. The upper mediastinum is a relatively small region; consequently the encroachment by the aneurysm soon leads to compression of the adjacent structures (Fig. 3).

Aberrant vascular rings may cause dysphagia, occurring in the early months of life.

3. *Pressure from Mediastinal Tumours.* Any of the various mediastinal tumours may cause compression in a manner similar to the foregoing. It is surprising to discover how often a tumour may be lodged in the mediastinum without causing any dysphagic symptoms. The rate of enlargement is obviously the important factor, because a slowly growing tumour must suffer considerable enlargement before causing obstruction of the oesophagus. The patient may complain of some slight difficulty in swallowing, but more often than not the symp-

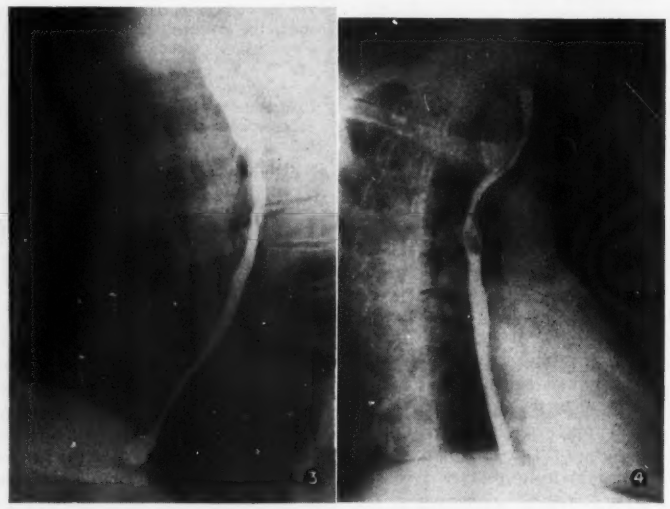

Fig. 3. A large aneurysm of the ascending aorta causing partial obstruction of the oesophagus.

Fig. 4. A superior mediastinal thyroid cyst causing displacement of the oesophagus with dysphagia.

tom is ignored until the size of the tumour causes obvious mechanical obstructive effects (Fig. 4).

4. *Mediastinitis.* Infection of the mediastinum is most often secondary to a penetrating lesion of the oesophagus or bronchus. The cause of the penetrating injury may be quite apparent and initially dysphagia may be absent. With the development of a mediastinitis a difficulty in swallowing ensues, because the muscular tube becomes surrounded by the active inflammatory process.

5. *Empyema.* Similarly, a large empyema may cause swallowing difficulties. If the pus is under tension, the dysphagia is due to direct compression of the oesophagus. In more chronic cases the thickening of the pleura and the formation of a pyogenic membrane provides a firm rigid lining on one side of the oesophagus. The patient can swallow, but with considerable embarrassment.

D. LESIONS OF THE LOWER END OF THE OESOPHAGUS

1. *Carcinoma.* Carcinoma on the lower end of the oesophagus is the commonest cause of dysphagia in the age group 45–60 years. The usual histology is that of a squamous-celled carcinoma, which may start as a submucous lesion. If, however, the carcinoma arises in a gland, it will have an adenomatous structure large enough to obstruct the lumen; or a tumour surrounding the oesophagus may cause a narrowing or constricting effect.

Occasionally a carcinoma of the cardia of the stomach extends upwards, leading to obstruction of the lower part of the oesophagus.

2. *Achalasia.* Achalasia or cardiospasm has been attributed to several causes, of which neuro-muscular inco-ordination is probably the most feasible. It can occur at any age and usually commences with some swallowing difficulty which increases until the patient is only able to imbibe fluids. Often, patients are not wasted in spite of being unable to swallow solid food. As they are forced to take fluids alone, they swallow quantities of milk and highly nourishing liquids. As a result of the delay in emptying, the oesophagus becomes patulous and is often large enough to contain several pints of fluid. The oesophagus may over-fill and its contents may run into the trachea with a resultant broncho-pneumonia (Figs. 5A, 5B).

The onset of symptoms is so gradual that a few years may elapse before the patient seeks medical aid.

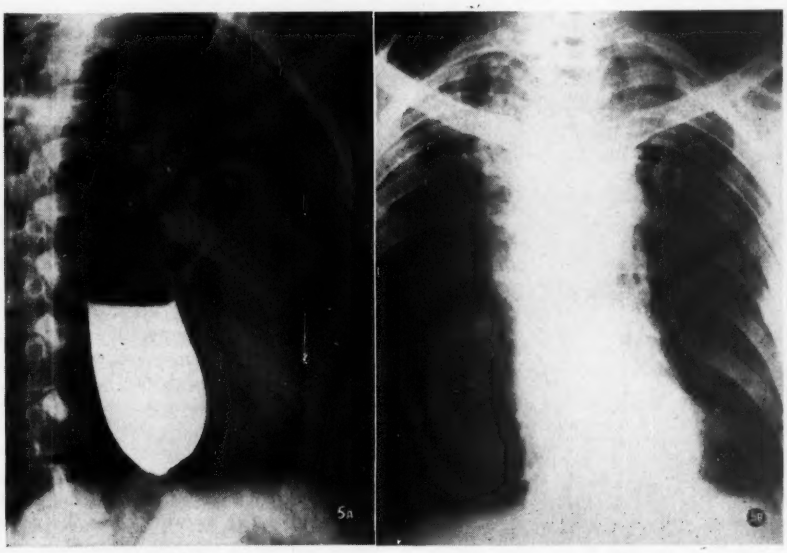

Fig. 5*A.* An early stage of achalasia of the cardia causing dysphagia, which responded well to oesophageal dilatation.

Fig. 5*B.* A case of achalasia of the cardia of several years' duration. The widely distended oesophagus is seen as a broad mediastinal shadow.

3. *Peptic Oesophagitis.* This lesion is due to the presence of secretory glands in the lower end of the oesophagus. Peptic ulceration occurs in this abnormally placed tissue in similar fashion to the ulceration seen in the gastric mucosa.

With the passage of time the inflammatory reaction is supplanted by the formation of fibrous tissue which undergoes contraction. The resulting stricture is responsible for the obstructive symptoms.

4. *Cicatricial Stenosis.* This is a condition which frequently complicates a hiatus hernia and short oesophagus. In these cases there is ulceration at the cardia and the fibrous contraction causes not only a stricture effect, but also an apparent shortening of the oesophagus.

5. *Diaphragmatic Hernia.* Herniation of part if the stomach through the diaphragm leads to a distortion of the lower end of the oesophagus and also to its compression by the additional bulk contained in the posterior mediastinum.

Some degree of oesophagitis is present in most cases of old-standing diaphragmatic hernia. Stricture of the oesophagus may be a sequel, with narrowing of the oesophageal lumen as well as shortening of the tube. This shortening has often been considered congenital in origin. Congenital shortness of the oesophagus occurs but rarely, however, and in cases where a diaphragmatic hernia is present, the true position should be readily ascertained (Fig. 6).

Fig. 6. Diaphragmatic hernia showing part of the stomach in the thorax. The oesophagus is normal in length, and the hernia appeared only in the Trendelenberg position.

6. *Traction Diverticulum.* A diverticulum may result from the adherence of the oesophagus to some localized site of infection, e.g. an infected tuberculous gland. Peristaltic movements will lead to an increase in the size of a hernia once the muscular wall of the oesophagus has been weakened. The mechanism of obstruction is similar to that seen in the case of a pharyngeal diverticulum. The food passes straight into the diverticulum or blind end, and as this enlarges the part of the oesophagus below the sac comes off at a higher and more oblique angle. The outlet from the diverticulum may become obstructed, or the actual weight and pressure of the diverticulum on the lower oesophagus may cause dysphagia.

E. OTHER CAUSES

Several unusual causes of dysphagia should be mentioned for the sake of completeness:

(*a*) Simple tumours.
(*b*) Sarcomata.
(*c*) Syphilitic stricture.
(*d*) Scleroderma.

ASSOCIATED SYMPTOMS

Obstruction. The course of obstruction is usually slow but progressive. Initially the patient may complain of a sensation of something in the chest, which he usually describes as a 'lump'. After a time a difficulty in the swallowing of solid and coarse food is noticed; this progresses until food will only pass down the oesophagus if helped along with a gulp of water.

Eventually only fluids can pass and, at this stage, vomiting or regurgitation may become troublesome. If, perchance, a small portion of food should block an already narrowed oesophagus, complete obstruction will result.

Vomiting. Bleeding associated with a regurgitation of food is suggestive of a carcinoma. A massive growth may not only obstruct the lumen, but may bleed into it. The regurgitation of food and blood may come right up into the mouth.

Anorexia and Loss of Weight. Loss of weight naturally occurs as the general nutrition of the patient regresses. This may be due to a loss of appetite as well as to the actual lack of food passing into the stomach.

Pain and Dyspepsia. Pain is not a common symptom except when a foreign body has been swallowed. Patients frequently complain that they have the sensation of a lump; this is

usually referred to the centre of the chest. A drink of water may be required to facilitate the passage of foods which feel 'stuck in the chest'. Discomfort following food or discomfort experienced between meals is frequently ascribed to the burning of indigestion.

GENERAL EXAMINATION

The general examination must be a complete one and should include particularly careful inspection of the mouth, tongue and throat, and an examination of the central nervous system.

It is not enough to listen to the patient's story of a swallowing difficulty. He should be asked to demonstrate it, as during the process of swallowing, auscultation of the chest may indicate the site at which the passage of the food is obstructed.

Vomited material should be inspected. There may be no complaints of melaena, but the patient's stools should always be examined as a slight bleeding may have been overlooked.

The patient should be weighed. Strangely enough, he is often totally unaware of a loss of weight. As mentioned before, patients suffering from dysphagia may actually be obese, because they drink rich milk foods when they are unable to swallow more solid material. They thus have a much greater total food intake than the average person.

The skin should be examined for changes due to scleroderma or to hyperthyroidism.

OPSOMMING

Die etiologie van disfagie word bespreek, met spesiale verwysing na karsinoom van die slukderm.

(*To be continued*)

SWELLINGS OF THE NECK

MIDLINE SWELLINGS

JAN H. LOUW, CH.M.*
and
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(*Continued from p. 288*)

2. INFLAMMATORY SWELLINGS

Although almost any inflammatory swelling may occupy the midline of the neck, the only infective lesion which is *characteristically* midline is the gumma of tertiary syphilis. Midline gummata of the neck are usually found below the level of the thyroid cartilage in the suprasternal region. They may be limited to the soft tissues (Fig. 11), but more commonly start as a sub-periosteal focus which subsequently extends to the overlying skin (Fig. 12).

A gumma is a chronic granulomatous swelling consisting of a central mass of necrotic tissue surrounded by a zone of cellular infiltration and fibrosis. It commences gradually and indefinitely with the development of a comparatively painless, rounded or ovoid indurated swelling, the edges of which fade into the surrounding tissues. If untreated, the mass enlarges slowly and after weeks or even months softens at the centre. The swelling is at first firm and fibrous; later it becomes 'rubbery' and finally soft and fluctuant. When the inflammatory process approaches the surface, the overlying skin becomes hyperaemic and assumes a purplish colour.

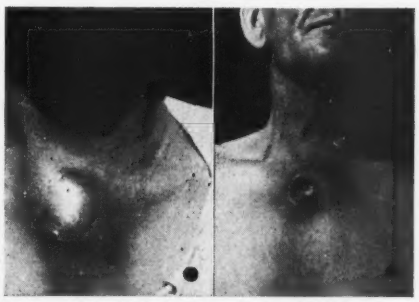

Fig. 11 (*Left*). Midline gumma of the skin in the suprasternal region.
Fig. 12 (*Right*). Subperiosteal gumma of the sternum which has broken down to form a typical gummatous ulcer.

Individual gummata seldom exceed the dimen-

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sions of a small orange, at which stage the swelling breaks down on the surface discharging thin, yellowish pus. A typical gummatous ulcer with punched-out edges and covered by a wash-leather slough is left (Fig. 12).

The diagnosis of a gumma should not present much difficulty. Syphilis must be suspected in any comparatively painless swelling of obscure origin. If such a swelling has the features of a mild, chronic inflammatory process and there are other manifestations of syphilis, the diagnosis is straightforward. Serological tests will provide confimatory evidence and, under appropriate treatment, the lesion usually resolves with surprising rapidity.

3. MEDIAN LINE SWELLINGS OF THE THYROID

Thyroid swellings usually extend well beyond the midline of the neck and will be dealt with under the heading of *Swellings of the Anterior Triangle.* In certain circumstances, however, localized nodules in the thyroid present as midline swellings to be differentiated from other lumps in this region. The following examples illustrate this.

(a) *Adenoma of the Isthmus* (Fig. 13). Adenomata of the thyroid arising from the isthmus may either bulge forwards between the lower bellies of the sternomastoids, or descend behind the sternum. The latter tend to produce pressure on the trachea and the patients often complain that bending of their neck forwards, or elevation of their arms, causes choking, especially at night.

These adenomata, like adenomata arising in other parts of the gland, are usually single, and the rest of the gland is perfectly normal. Symptoms of thyrotoxicosis are rare, but evidence of malignancy may be present. Whenever such a discrete nodule is found in the thyroid, its immediate removal must be advised because of the risk of malignancy. (This will be discussed in a later section).

(b) *Adenoma of the Pyramidal Lobe* (Fig. 14). It is not generally appreciated that a pyramidal lobe is present in fully 70% of people, and occasionally an adenoma may develop in it. Such an adenoma may simulate a thyroglossal cyst very closely, especially if it has undergone cystic degeneration. As a rule, however, a tongue of thyroid tissue can be felt either above or below the adenoma. Immediate removal is the only rational treatment.

(c) *Hyperplasia of the Pyramidal Lobe* (Fig. 15). Unless the pyramidal lobe is carefully identified and removed during the course of a thyroidectomy, a portion of this little tongue of thyroid tissue may inadvertently be left *in situ.* We have encountered a number of these cases where the remnant subsequently enlarged with the production of a swelling resembling a thyroglossal cyst. The presence of a thyroidectomy scar and, in one patient, the recurrence of thyrotoxicosis, rendered the diagnosis of our cases straightforward.

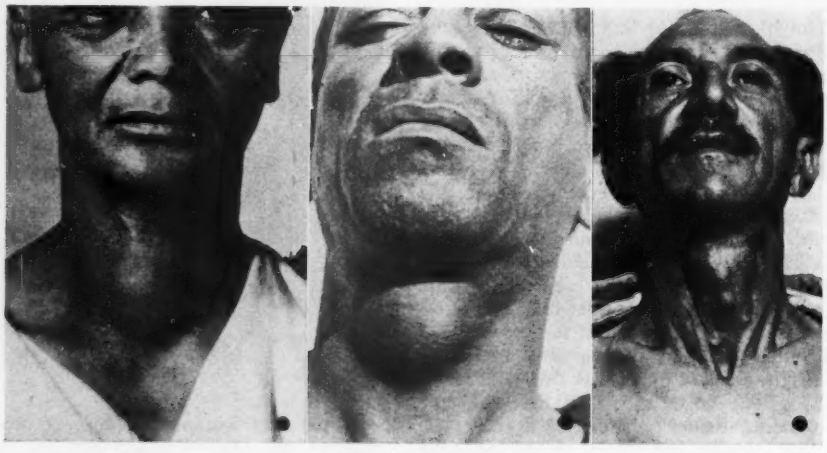

Fig. 13 (*Left*). Solitary adenoma of the isthmus of the thyroid.
Fig. 14 (*Middle*). Solitary adenoma of the pyramidal lobe of the thyroid.
Fig. 15 (*Right*). Hyperplasia of the pyramidal lobe. The patient had a previous thyroidectomy (note scar just above clavicles) and this swelling arose in a remnant of pyramidal lobe not removed.

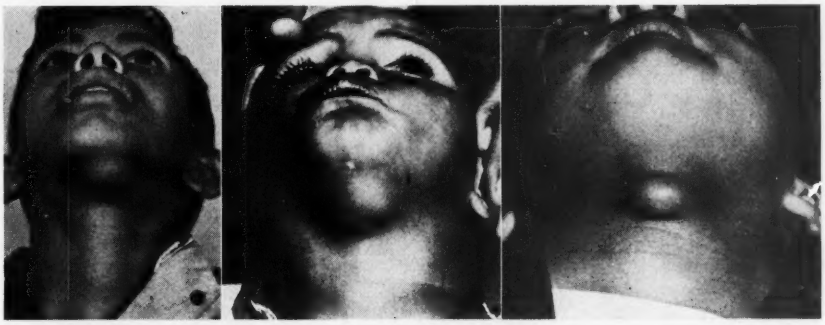

Fig. 16 (*Left*). Tuberculous submental glands presenting as a paramedian swelling.
Fig. 17 (*Middle*). Suppurative submental lymphadenitis producing a midline swelling simulating an infected dermoid cyst.
Fig. 18 (*Right*). Suppurative lymphadenitis simulating an infected thyroglossal cyst.

B. OTHER MIDLINE SWELLINGS

These include paramedian swellings as well as swellings which have extended across the midline or happen to be midline simply by chance. They arise mainly in the skin, subcutaneous tissues, lymph nodes and thyroid gland and may be due to congenital malformations, trauma, inflammation or neoplastic formation. All these swellings are more frequently encountered in the lateral triangles of the neck and will be considered in greater detail when lesions of those regions are discussed. Reference is being made to them at this stage because in this situation they may be confused with typically midline swellings. Illustrative examples that we have encountered include the following:

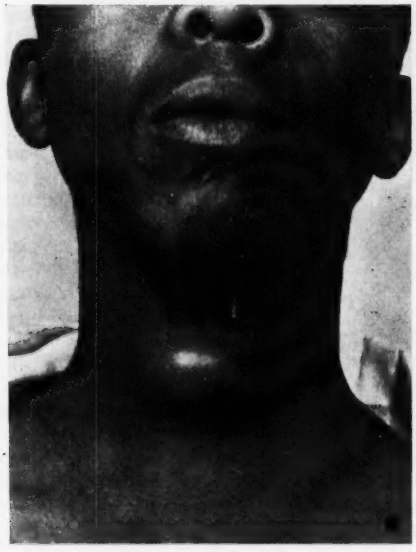

Fig. 19. "Collar-stud abscess" arising from tuberculous cricothyroid glands and presenting in the midline.

1. *Lymph Node Affections.* It has already been pointed out that no single lymph node is situated strictly in the midline of the neck. Many of them, however, are situated close to the midline, e.g. submental, cricothyroid and suprasternal. When these enlarge the swelling may simulate a midline swelling very closely (Fig. 16). Indeed, if glands on either side of the midline enlarge and become adherent, a truly midline swelling is produced.

If suppuration should occur in these enlarged glands, the abscess may spread in such a way that it occupies the midline and simulates an infected dermoid (Fig. 17) or a thyroglossal cyst (Fig. 18).

Furthermore, a cold abscess arising in tuberculous glands may penetrate the deep fascia and point in the midline (Figs. 19 and 20) or it may present in the suprasternal fossa (Fig. 21).

Malignant lymph node enlargements may also present as midline swellings. Examples which we have encountered include secondaries from carcinoma of the lip (this Journal, 1955, p. 102, Fig 36), secondary melanoma (this Journal, 1955, p. 106), secondaries from carcinoma of the breast simulating a thyroid swelling (Fig. 22) and Hodgkin's lymphadenopathy (Fig. 23).

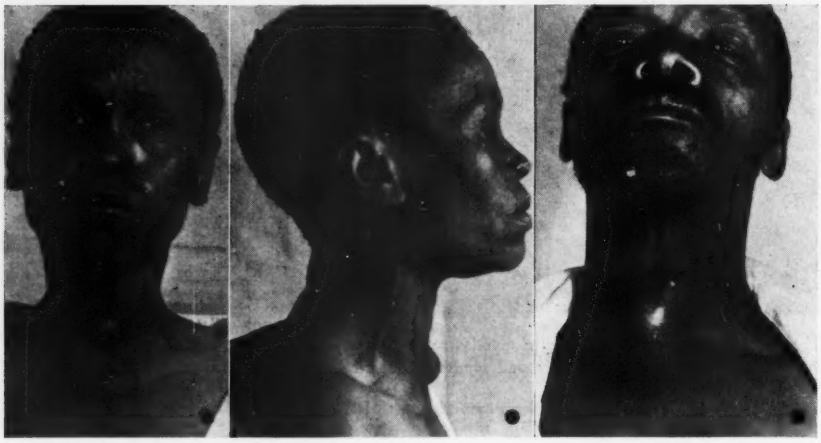

Fig. 20 (*Left and middle*). Tuberculous "collar-stud abscess" simulating an infected thyroglossal cyst.
Fig. 21 (*Right*). Cold abscess presenting in the suprasternal fossa.

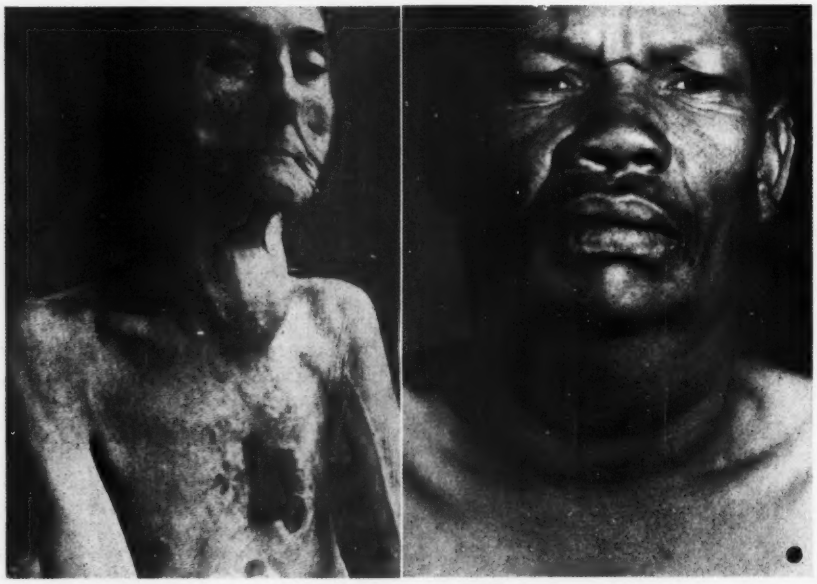

Fig. 22 (*Left*). Secondary suprasternal malignant glands from carcinoma of the breast, simulating a thyroid swelling.
Fig. 23 (*Right*). Hodgkin's disease of the cervical lymph nodes.

The clinical features of all these glandular enlargements have already been described. Their diagnosis does not usually offer much difficulty.

OPSOMMING

Ontstekingswelsels en middellyn-swelsels van die skildklier word geïllustreer en beskryf, sowel as ander swelsels wat uit 'n kliniese oogpunt na middellyn-swelsels lyk, nl. limfklieraandoenings.

(*To be continued*)

THE HYPERVENTILATION OR OVERBREATHING SYNDROME

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Most people breathe too fast or too deeply when they are afraid or angry or emotionally disturbed in some other way. The reason for this increase in rate or depth of breathing is not known. It may be part of a primitive preparation for fight or flight. Cannon suggested that it served the useful purpose of getting rid of carbon dioxide from the body in anticipation of the augmented discharge of carbon dioxide from the muscles as soon as the great muscular exertion required for fight or flight begins. Primitive man had no hesitation about the necessity for muscular effort when aroused. Modern man is, to a large extent, inhibited by cultural and social tradition from expressing his anger or fear so directly. Consequently, although physiologically prepared for such activity, he has no outlet for it in muscular exertion. The overbreathing may then lead to a distressing group of symptoms and signs which have been labelled the 'hyperventilation syndrome'.

Those who suffer from this syndrome seldom complain of overbreathing. Their subjective respiratory difficulty has been called 'sighing dyspnoea'. They usually describe it as an inability to 'take a deep enough breath' or 'get enough air into the lungs'. It can be an extraordinarily distressing symptom. One patient drove through town holding the door of his car open because of his urgent desire to get more air into his lungs. Another patient who usually got his attacks at night (nocturnal occurrence of attacks that wake the patient from sleep are not uncommon) would jump out of bed twisting and writhing in his efforts to 'get a deep enough breath'.

A striking feature of this respiratory difficulty is that it is never related directly to exertion. Indeed, in most cases it is relieved by motor activity and patients often remark on their inability to remain still during an attack. Relatives are often aware of the overbreathing but may omit to mention it because their attention is directed to other symptoms or signs. One patient had been diagnosed as epileptic although her 'fits' were clearly hyperventilation attacks. No mention was made of any respiratory difficulty until her mother watched her being instructed to overbreathe and said: 'Oh, but she always breathes like that before she gets a fit'.

Overbreathing causes marked temporary disturbance of neurogenic function, both cerebral and peripheral. More than 60% of people who overbreathe complain of a feeling of light-headedness or giddiness—never a true vertigo. This sensation is aggravated by the upright posture and relieved by recumbency. Most patients feel unsteady on their feet and may appear to be intoxicated. One woman of 45 had noticed that if she got bad news, she tended to have difficulty in 'getting enough air into her lungs'. On one occasion she had an attack of this sort while travelling on a bus. She felt confused and her extremities began to tingle. She felt so unwell that she asked the conductor to stop the bus so that she could dismount. She spoke thickly because her mouth felt stiff and she staggered as she spoke. He thought she was drunk and refused to stop the bus. In desperation she jumped off while it was still moving and he threatened to charge her for drunk and disorderly conduct.

Some patients describe their cerebral condition during hyperventilation as being one of a most disturbing 'unreality'. A doctor once described to me a seance which he attended in the company of a young girl who had recently been bereaved. He said: 'In the darkness I could hear her breathing heavily. Suddenly she screamed and as the lights were switched on and a pencil thrust into her hand she scrawled DAD with tetanic fingers.' The girl, because of the strange feeling of unreality induced by overbreathing, was quite sure she had been in touch with the spirit of her dead father.

The term 'black-out' was frequently used by patients. Of a series of 40 cases only 5 had a disturbance of consciousness gross enough to merit the term. A typical case is the schoolteacher who was sitting reading a book when she suddenly felt faint and began to sweat. She then became unconscious within a few minutes of the onset of her symptoms and said that she was completely unaware of her surroundings for several minutes. When she came to she noticed that her thumbs were

turned into her palms and her fingers were blue and tingling. She was admitted to hospital as a 'coma of unknown origin'.

Drowsiness is not uncommon. Some persons voluntarily overbreathe in an effort to fall asleep.

Dysfunction of the peripheral nerves leads ultimately to tetany. Sensory involvement is earlier and more common than the well-known motor manifestation of tetany. Paraesthesiae always start distally either in limbs or round the centre of the face. In addition to tetanic spasm of the extremities, difficulty is often experienced in articulation because of 'stiffness' of the muscles round the mouth. Neck rigidity may result from spasm of neck muscles. Three patients were sent in to hospital as cases of meningitis because of this sign.

Marked muscle tenderness may be present in muscles previously the site of tetanic spasm. One nurse was labelled 'poliomyelitis' because of tenderness of her calf muscles after a bout of overbreathing.

Apart from the nervous system, other widespread disturbances may occur. The cardiovascular system is disturbed. Tachycardia is an inevitable accompaniment of overbreathing and praecordial pain of the left mammary type is not uncommon. Some authors have described electrocardiographic changes (mainly inversion of T waves) and this may lead the unwary into making a diagnosis of coronary thrombosis in an already anxious patient.

The most common gastro-intestinal disturbance is a feeling of fullness or distension due to concomitant air swallowing. Cardiospasm sometimes results and may cause severe substernal pain.

All patients who overbreathe complain of fatigue 'as though I have just run a mile'.

Finally, a striking peripheral vasoconstriction is invariably present.

The pathogenesis of all these symptoms and signs is of interest. At least 3 separate physiological mechanisms are invoked as a direct result of overbreathing. These are:

1. Increased alkalinity of the blood.
2. Reflex peripheral vasoconstriction.
3. Circulatory effects resulting from the muscular exercise of overbreathing.

1. The increased alkalinity of the blood which results from the loss of CO_2 during hyperventilation is of primary importance. Patients who overbreathe a CO_2-rich mixture do not develop the characteristic symptoms of neurogenic dysfunction. Conversely, many of the symptoms may be relieved by re-breathing CO_2. It is the alkalosis that:

(*a*) Increases neuro-muscular irritability to the point where tetany may develop.

(*b*) Causes cerebral blood vessels to constrict. This conserves their low CO_2 content. Cerebral blood flow is usually diminished by about 30% during hyperventilation.

(*c*) Renders haemoglobin less able to part with its oxygen, thereby interfering further with the nutrition of the tissues (and especially of nerve tissues).

2. Reflex peripheral vasoconstriction is an integral part of the hyperventilation syndrome. The motor route for this reflex is along the sympathetic nerve fibres. The afferent path is not precisely known, but seems to be connected in some way with expansion of the chest or lungs. The peripheral vasoconstriction appears to be of some additional importance in the genesis of the peripheral nerve dysfunction by lowering the threshold of nerve irritability and thus rendering it more susceptible to the effects of the alkalaemia.

3. Hyperventilation is a vigorous form of muscular exercise so that an increase of heart rate occurs regularly.

4. A fourth factor which must receive mention because of the role of emotional stress in the etiology of the hyperventilation syndrome is adrenaline release. It must be considered as a possible background factor because of its action as a respiratory stimulant, its effect in causing skin vasoconstriction and its influence in disturbing ionic equilibrium. Although adrenaline release does not appear to alter the symptoms and signs of the hyperventilation syndrome in a qualitative sense, it plays a part in enhancing or maintaining the physiological effects of the other 3 factors.

TREATMENT

Much of the treatment is built around the hyperventilation test, which consists of instructing the patient to breathe deeply at a rate of between 30-40 breaths a minute. Cerebral symptoms are more easily elicited with the patient upright and peripheral symptoms with the patient recumbent. Within a few minutes the patient's symptoms are reproduced and the recognition of the similarity of the symptoms is immediately and dramatically demonstrated. An explanation of the mechanisms of the hyperventilation syndrome is then given and the fact that emotional stress causes overbreathing is emphasized. The relief gained by re-breathing CO_2 from any convenient receptable, e.g. a paper bag or hat, is demonstrated.

Finally the patient is encouraged to discuss his emotional problems. Mild sedation may be necessary and the art of progressive relaxation can be taught.

OPSOMMING

Hiperventilasie waarvan die pasiënt onbewus is, kan 'n verskeidenheid van simptome tot gevolg hê wat tans as 'n entiteit in die ‚Hiperventilasie-sindroom' herken word.

Daar kan 'n opvallende tydelike versteuring van neurogeniese funksie, sowel serebraal as randstandig, wees wat aanleiding tot bewusteloosheid en tetanie kan gee.

Die kardiovaskulêre en die spysverteringskanaalstelsel kan ook versteur word.

Die meganismes wat ten grondslag lê van die produksie van die simptome van hierdie sindroom word bespreek, en die behandeling van die toestand word kortliks omskryf. Aandag word gevestig op die noodsaaklikheid dat die pasiënt sy emosionele probleme moet bespreek.

PREPARATIONS AND APPLIANCES

SIGMAGEN TABLETS

Description: Each *Sigmagen* Tablet contains 0.75 mg. prednisone, 325 mg. acetylsalicylic acid, 20 mg. ascorbic acid and 75 mg. aluminium hydroxide.

Advantages: *Sigmagen* combines prednisone (*Meticorten*), aspirin and ascorbic acid to provide potentiated anti-rheumatic action with analgesic effect and vitamin C stress support. Containing *Meticorten*, which has 3-5 times the therapeutic effectiveness of cortisone or hydrocortisone orally with substantially greater freedom from undesirable activity, *Sigmagen* affords safe reliable corticosteroid therapy, especially designed for a wide range of non-specific rheumatic diseases. The simultaneous

complementary action of the combined anti-rheumatic agents in *Sigmagen* permits maintenance of superior relief at minimal dosages unlikely to elicit undesirable effects.

Sigmagen is of particular value in patients no longer responding to salicylates alone.

Indications: *Simagen* is indicated in the treatment of mild cases of rheumatoid arthritis or spondylitis, subacute or interval gout, bursitis, myositis, synovitis, fibrositis and neuritis.

Packing: *Sigmagen* Tablets, bottles of 30, 100 and 500.

Manufacturers: Scherag (Proprietary) Ltd., P.O. Box 7539, Johannesburg.

DELTON COMPOUND

SALICYLAMIDE TABLETS

A compound tablet of the antipyretic-analgesic type, based on salicylamide in balanced combination with phenacetin, codeine phosphate and caffeine.

Each Delton tablet contains:

Salicylamide	54.16%
Phenacetin	8.33%
Codeine Phosphate	0.91%
Caffeine	8.33%

Clinical Experience: Salicylamide is a modified form of aspirin. It is a central analgesic of the antipyretic-analgesic type. It is quick in action and less likely than aspirin or salicylate to give rise to gastric irritation. It does not accumulate. In the amounts equal to the usual dosage of aspirin taken to alleviate headache and various aches and pains (5-10 grains) toxicity is extremely improbable. As to the rare case of idiosyncrasy:

(a) There is no evidence that salicylamide is more likely to give rise to excessive reactions than any other substance of this or any other type.

(b) Weight for weight, it is less toxic than aspirin.

There is so far no evidence of allergic manifestations. These are by no means unknown with aspirin, but the lower plasma levels of the amide should tend to make such an unfavourable response less likely with it.

Competent reports from expert physicians, dealing with several hundreds of patients, indicate that in massive dosage it has a better therapeutic index than salicylate or aspirin. Idiosyncrasy should always be probed by administration of a prior test dose before any form of intensive therapy and is the physician's responsibility.

The substitution of salicylamide for aspirin in comparable doses would be an advantage. This substitution in various compound tablets is, therefore, to be recommended since salicylamide has been shown to be compatible and synergistic with phenacetin, codeine phosphate, etc. in addition to its advantages over aspirin.

Indications: Delton can be administered in all cases in which salicylate therapy is indicated. These include acute rheumatic fever, rheumatoid arthritis, fibrositis and polyarthritis. Delton also relieves sciatica, neuritis, myalgia, lumbago, pleurisy, neuralgia and sinusitis.

Dosage: For headaches, neuralgia, toothache, periodic pain—one tablet. Repeat 2-3 times a day, if needed.

For fibrositis, sciatica, lumbago, neuritis or muscular rheumatism—two tablets. Repeat 1-2 times a day, if needed.

For influenza, feverish colds—two tablets, taken with a hot drink, before going to bed.

Administration: Delton tablets can be taken whole, or dispersed in water or milk. *They should not be given to children under five.* For older children, half to one tablet, according to age.

Packing: Delton is presented in 11.8 gr. tablets and packed in glass phials of 10 tablets, protected by a carton.

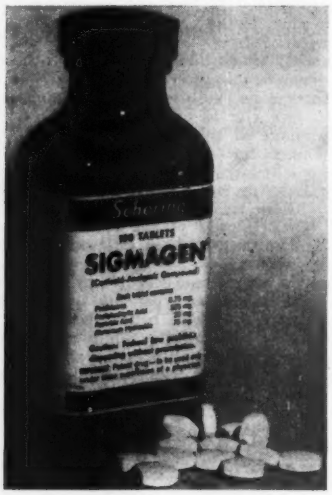
Distributors: Protea Pharmaceuticals Limited, P.O. Box 7793, Johannesburg.

PREPARATE EN TOESTELLE

SIGMAGEN-TABLETTE

Beskrywing: Iedere *Sigmagen*-tablet bevat 0.75 mg. prednisoon, 325 mg. asetielsalisielsuur, 20 mg. askorbiensuur en 75 mg. aluminiumhidroksied.

Voordele: Prednisoon (Meticorten), aspirien en askorbiensuur is verenig in *Sigmagen* om 'n versterkte rumatiekbestrydende uitwerking gepaard met 'n pynverdowende effek en vitamien-C-spanningsteun te verskaf. *Sigmagen* bevat *Meticorten* wat terapeuties 3-5 keer doeltreffender is as mondelinge kortisoon of hidrokortisoon, en 'n aansienlik groter vryheid van onwenslike aktiwiteit bied. *Sigmagen* is dus 'n veilige en betroubare kortikosteroïedmiddel wat spesiaal ontwerp is vir 'n groot verskeidenheid van nie-spesifieke rumatiekkwale. Die gelyktydige aanvullende uitwerking van die gesamentlike rumatiekbestrydende middels in *Sigmagen* maak dit moontlik om voortreflike verligting te verskaf met minimale dosisse wat hoogs waarskynlik geen ongunstige effek sal hê nie.



Sigmagen is veral van groot waarde vir pasiënte wat nie langer op salisilate alleen reageer nie.

Indikasies: *Sigmagen* word aangedui vir die behandeling van ligte gevalle van chroniese gewrigsontsteking of werwelontsteking, subakute of tussenpoosjig, slymbeursontsteking, miositis, gewrigsvliesontsteking, fibrositis en senuwee-ontsteking.

Verpakking: *Sigmagen*-tablette, bottels van 30, 100 en 500.

Fabrikante: Scherag (Proprietary) Ltd., Posbus 7539, Johannesburg.

DELTON-SAMESTELLING

SALISIELAMIED-TABLETTE

'n Saamgestelde tablet van die koorswerende en pynstillende tipe, gebaseer op salisielamied in 'n gebalanseerde samestelling met fenasetien, kodeïenfosfaat en kaffeïen.

Iedere Delton-tablet bevat:

Salisielamied	54.16%
Fenasetien	8.33%
Kodeïenfosfaat	0.91%
Kaffeïen	8.33%

Kliniese Ondervinding: Salisielamied is 'n gewysigde vorm van asperien. Dit is 'n sentrale pynstiller van die koorswerende en pynstillende tipe. Dit werk vinnig, en sal waarskynlik nie so maklik soos asperien of salisilaat aanleiding tot maagprikkeling gee nie. Dit hoop nie op nie. In hoeveelhede gelykstaande aan die dosis asperien wat gewoonlik geneem word om hoofpyn en verskillende ander pyne te verlig (5-10 grein) is toksisiteit hoogs onwaarskynlik. Wat betref die uitsonderlike gevalle van idiosinkrasie:

(a) Is daar geen bewyse dat salisielamied waarskynliker aanleiding sal gee tot buitensporige reaksies as enige ander middel van hierdie of enige ander tipe nie.

(b) Is dit, gewig vir gewig, minder toksies as asperien.

Daar is geen bewyse van allergiese manifestasies nie. Sulke manifestasies is geensins onbekend met asperien nie, maar die laer plasma-peil van die amied behoort so 'n ongunstige reaksie minder waarskynlik te maak.

Gesaghebbende verslae van deskundige geneeshere wat etlike honderde pasiënte daarmee behandel het, dui aan dat, in massiewe dosisse, dit 'n beter terapeutiese indeks as salisilaat of asperien het. Idiosinkrasie moet altyd vasgestel word deur die toediening van 'n voorafgaande toetsdosis voordat enige vorm van intensiewe terapie toegepas word, en dit is 'n verantwoordelikheid wat by die geneesheer berus.

Die vervanging van asperien met salisielamied in vergelykbare dosisse sal derhalwe voordelig wees. Sodanige vervanging in verskillende saamgestelde tablette word derhalwe aanbeveel, aangesien salisielamied die bewys gelewer het dat dit vermengbaar en sinergisties met fenasetien, kodeïenfosfaat, ens., is, heeltemal afgesien van sy ander voordele in vergelyking met asperien.

Indikasies: Delton kan toegedien word in alle gevalle waar salisilaatterapie aangedui word. Dit sluit in rumatiekkoors, chroniese gewrigsontsteking, fibrositis en poliarthritis. Delton verlig ook heupjig, senuwee-ontsteking, mialgie, lendejig, borsvliesontsteking, sinkings en sinusitis.

Dosis: Hoofpyn, sinkings, tandpyn, periodieke pyn—een tablet. Herhaal 2-3 keer per dag, indien nodig.

Fibrositis, heupjig, lendepyn, senuwee-ontsteking of spierrumatiek—twee tablette. Herhaal 1-2 keer per dag, indien nodig.

Influenza, koorsagtige verkoues—twee tablette met 'n warm drankie voor slapenstyd.

Toediening: Delton-tablette kan heel geneem of in water of melk opgelos word. *Hulle moet nie aan kinders onder vyf jaar gegee word nie.* Vir ouer kinders: 'n Halwe tot een tablet, volgens die ouderdom van die kind.

Verpakking: Delton word aangebied in tablette van 11.8 grein in glasflessies bevattende 10 tablette en beskerm in 'n kartondosie.

Verspreiders: Protea Pharmaceuticals Limited, Posbus 7793, Johannesburg.

NOTES AND NEWS · BERIGTE

DISPENSING BY DOCTORS

The Minister of Health decided not to proceed with the highly contentious Medical, Dental and Pharmacy Amendment Bill during the last session of Parliament. This arrests temporarily the public agitation by pharmacists to prevent doctors from dispensing.

The serious situation created by this attack on the medical profession's rights must be watched with great care during the Parliamentary recess.

* * * *

Dr. Louis F. Freed, M.A., M.D., D.Phil., author of *The Problem of European Prostitution in Johannesburg*, has been invited to attend the forthcoming Congress of the International Abolitionist Federation, to be held at Frankfurt-am-Main from 17-19 October 1956. Dr. Freed is Lecturer on Social Medicine at the University of the Witwatersrand.

* * * *

Mr. Bertram L. Shaff, M.B., F.R.C.S. (Edin.), has joined Mr. J. Wolfowitz, M.B., F.R.C.S. (Edin.) in partnership in practice as a surgeon at 308 Medical Centre, Jeppe Street, Johannesburg. (Telephones: *Rooms*: 23-5311/2; *Residence*: 41-2026).

* * * *

CORONARY THROMBOSIS AND AIR TRAVEL

The great majority of patients who have recovered from coronary thrombosis are fit to make a short flight of under 5 hours' duration. But those with even a minor degree of coronary disease should not undertake long journeys by air unless they have been free from symptoms for at least 3, and preferably 6, months. Their condition should be revealed to the medical department of the airline for a decision regarding advisability to travel and to enable appropriate instructions to be issued to all concerned for their care and welfare along the route. (Whittingham, Sir H. (1956): The Practitioner, **176,** 179.)

Dr. Ronald Singer, of the Department of Anatomy, University of Cape Town, has been elected a Fellow of the American Anthropological Association. He has also been invited to read a paper at the Neanderthal Centenary in Dusseldorf in August 1956.

Dr. R. Singer

The Wenner-Gren Foundation for Anthropological Research, New York, recently awarded him a bursary to enable him to carry out specific studies at various research institutions in Europe, Scandinavia and the U.S.A., as well as to facilitate his attendance to read papers at the *First International Congress on Human Genetics* in Copenhagen (1-6 August) and the *Fifth International Congress on Anthropological and Ethnological Sciences* in Philadelphia (1-9 September).

* * * *

FIRST INTERNATIONAL CANCER CYTOLOGY CONGRESS

This important convention, sponsored jointly by the International Union against Cancer, the College of American Pathologists, the American Society for Clinical Pathologists and the Inter-Society Cytology Council, will be held at the Drake Hotel, Chicago, Illinois, U.S.A., from 9-11 October 1956.

An extensive programme, including panel discussions, has been arranged.

Further information can be obtained from Prof. J. Gillman, Department of Physiology, Medical School, Hospital Street, Johannesburg. (*Telephone*: 44-1492).

* * * *

Mr. Edward Abro, M.B., Ch.B., Ch.M. (Rand.), has commenced practice as a neurologist at 609 Medical Centre, 209 Jeppe Street, Johannesburg. (Telephones: *Rooms*: 22-1214; *Residence*: 41-4695).

REVIEWS OF BOOKS

JOHNSTONE'S MIDWIFERY

A Text-Book of Midwifery for Students and Practitioners. By R. W. Johnstone, *C.B.E.*, M.A., M.D., Hon. LL.D., F.R.C.S.E., F.R.C.O.G., F.R.S.E. (Pp. 572 + Index. With 295 illustrations. 36s.) 1955. 16th ed. London: A. & C. Black Limited.

The sixteenth edition of this well-known and standard textbook of midwifery has been revised in collaboration with Prof. R. J. Kellar, the present incumbent of the Chair of Obstetrics and Gynaecology which Professor Johnstone filled with such distinction in Edinburgh for so many years.

The whole text of the previous edition has been revised carefully by both authors, considerable alterations having been introduced in the sections dealing with the functions of the placenta, pre-eclampsia, uterine inertia and rupture, and inversion of the uterus.

The first section of the work is devoted to the relevant anatomy and physiology, presented from the standpoint of the clinical implications. The 'applied' approach in the endocrine description, e.g. is well illustrated by the explanation of premenstrual tension and the treatment of the condition based on experimental work, viz. the limitation of fluid intake during the second half of the menstrual cycle in those cases where the physio-

logical disturbance of the electrolyte pattern creates a condition which borders on the pathological.

Very clear and ample diagrams are a feature of the book. They illustrate admirably the account of normal and abnormal pregnancy and labour, and the concise classified presentation of aetiology, differential diagnosis, etc. throughout the work makes this volume a very popular one amongst undergraduate students preparing for their examinations. The important chapter on *Radiography in Obstetrical Diagnosis* (by Dr. J. Z. Walker) is illustrated with excellently reproduced radiographs and diagrams and, apart from operative obstetrics, there are special chapters on the puerperium, the physiology and care of the new born child and its pathology. The latter chapter includes a simplified account of the genetics of Rh with adequate information (from the clinical standpoint) about the Rh antibodies, for which the Fisher terminology is employed. However, the statement (p. 485) that the Rh genes occur at 3 adjacent loci on the chromosome is strongly contested in certain quarters. Even the Fisher terminology requires a fourth locus to accommodate Ff in addition to CcDdEe.

There is a clear statement of the indications for abortion, the view being expressed that, except when it is done with a definite therapeutic aim, abortion is illegal in all Christian countries. South Africa presumably qualifies for inclusion in this category of countries. At any rate, it has made provision for statutory recognition of the Almighty. Yet it is doubtful whether a therapeutic aim not directed to the prevention of an imminent threat to the life (as opposed to the health) of the mother would be regarded as lawful in the Union, where we have in addition such serious problems as pregnancy resulting from rape, especially when White and Black races are involved.

It is of interest that the authors regard German measles in the early months of pregnancy as a legitimate indication for abortion (p. 540), since in such a case there is no therapeutic aim directed at the mother; on the contrary, the intention is to destroy a probably malformed foetus. It is doubtful whether such an indication is lawful in the Union.

Many generations of students have been raised on this excellent textbook and have found it of great value subsequently in practice. The instruction in the guidance given for the management of obstetrical conditions is so sound that it is likely to find fairly world-wide acceptance. Its suitability as a textbook should, therefore, meet a considerable appeal, despite the local idiosyncrasies of teachers of the subject in various countries.

SCIENTIFIC BASIS OF MEDICINE

Lectures on the Scientific Basis of Medicine. Vol. III, 1953-1954. (Pp. 398. With IX plates. 35s.) London: The Athlone Press.

This is the third volume selected from the annual series of lectures given under the auspices of the British Post-Graduate Medical Federation and, like the previous volumes, must prove a source of pleasure to the progressive post-graduate student who looks upon medicine not only as a technical craft and a means of making a living, but also as an intellectual pursuit and a philosophy.

It is difficult to select individual lectures for comment, as the over-all standard is so excellent, but the first lecture by Professor Sigerist on *Science and History* should be read by all medical teachers and specialists. Professor Sigerist points out that the 'expert' has also 'an important part to play as an expert citizen', and that if the scientist is to take his rightful place in the community at large, the sciences must be approached not only technically but 'also historically, philosophically and sociologically'.

Professor Garrod contributes a lecture on *Causes of Failure in Antibiotic Therapy*, which presents simply and in common-sense terms the difficulties encountered by practitioners, and how to overcome these difficulties. For those lost in the welter of new drugs used in the treatment of malaria, Dr. C. Chesterman's lecture on *Anti-Malarial Drugs* will throw a beam of light into the darkness.

Other lectures on the *Chemotherapy of Cancer, Stress and Thyroid Activity, Body Water Control, The Supporting System and its Disorders*, show the diversity of the subjects covered. Professor Haldane's lecture on *The Genetics of Some Biochemical Abnormalities*, and Dr. G. Popjak's on *Biological Synthesis*, provide food for thought for those who are interested in these scientific border-lines of medicine. Dr. R. MacKenna's *Scientific Approach to Dermatology* will convince the sceptics who do not at present regard dermatology as any more than a matter of clinical study.

While there is no doubt that some of the lectures will prove too technical for the ordinary reader, the book will prove extremely valuable to all practitioners who like to read beyond the bounds of their own special interests, and like to undergo an annual course of 'brain dusting'.

ELECTROCARDIOGRAPHY

A Primer of Electrocardiography. By George E. Burch, M.D., F.A.C.P. and Travis Winsor, M.D., F.A.C.P. (Pp. 286. With 281 Illustrations. 1955. 3rd ed. $5.00). Philadelphia: Lea & Febiger.

The third edition of this book maintains the standard set by its predecessors. The text deals comprehensively with the fundamental concepts and the complex problems of modern electrocardiography. Hence the use of the word *Primer* in the title may, in a sense, be misleading and has no doubt been used to indicate the authors' aim to stress the basic rather than the contentious ideas in present-day electrocardiography. Controversial matters have been omitted and the essential principles are dealt with in a detailed and extensive manner. This detail may possibly cause a little bewilderment to the uninitiated, but is nevertheless very useful to the cardiologist who has occasion to refer to or who wishes to increase his knowledge of the basic principles.

The text has been profusely illustrated with many meaningful diagrams which contribute much to the understanding of the subject. A clear diagram is invariably worth pages of text.

The material is presented in sections dealing with the analysis and clinical significance of the electrocardiogram, the precordial leads, the disorders of cardiac rhythm and the applications of electrocardiography in clinical medicine.

Perhaps the explanation and interpretation of the various components of the electrocardiogram could have been carried out to a greater extent in terms of unipolar rather than bipolar electrodes. An innovation is an introductory section on spatial vectorcardiography. An excellent Appendix comments on the electrical axis, the tri-axial reference system and the average norms of the various intervals and component waves of the electrocardiogram. Another

section of the Appendix lists the definite and indefinite electrocardiographic criteria for the diagnosis of myocardial disease.

The text is well presented, clearly printed and bound in a handsome cloth cover. It is well suited to the experienced cardiologist as well as those beginners who have already made some acquaintance with the subject.

VIRAL AND RICKETTSIAL DISEASES OF MAN

Viral and Rickettsial Diseases of the Skin, Eye and Mucous Membranes of Man. By Harvey Blank, M.D., and Geoffrey Rake, M.B., B.S. 1955. Pp. 263 + Index. With 36 full colour illustrations and 63 black and white illustrations. 60s.). London: J. & A. Churchill Ltd.

This attractive book should interest not only specialists in diseases of the skin and the eye, but also every practitioner who is confronted daily with diseases of viral causation. After two introductory chapters, which include a practical résumé of methods used for the diagnosis of viral diseases, there are detailed accounts of herpes simplex, chicken pox and zoster, smallpox, cowpox and vaccinia, several exanthemata (including Fourth and Fifth Diseases) the common cold, herpangina, warts and molluscum contagiosum. These are followed by a concise yet adequate account of relevant viral diseases contracted from animals, including milker's nodules, orf, foot and mouth disease, cat scratch disease and psittacosis, and further chapters on epidemic keratoconjunctivitis, trachoma, lymphogranuloma venereum and the rickettsial diseases.

The inclusion of so much material in a comparatively small volume deserves great praise; the authors have nowhere sacrificed clarity to conciseness and every subject receives enough treatment to interest and instruct the practising medical man. A few points of general interest are picked out of the host of instructive material presented by the authors, in the hope that they will stimulate practitioners to read this book.

Contrary to current belief, there is *no* evidence that recurrent apthae are caused by a virus, particularly the virus of herpes simplex. Treatment of trachoma with sulphonamides and antibiotics apparently attacks the causative virus (a Chlamydozoacea) directly, and not only the secondary bacterial invaders. 'Complete surgical excision of warts cannot be recommended because at least 25% of the lesions recur in the scar'. This fact is well known to dermatologists, but it is time that it was also revealed to many surgeons—in this country at any rate. The whole section on the treatment of warts is, in fact, a gem of summarization and should prove of great value to the practitioner.

The few minor criticisms that follow do not imply that this reviewer has anything but the highest praise for the book as a whole. The Koebner phenomenon refers to the reaction produced by non-specific irritation imitating the clinical dermatosis; thus a patient with psoriasis may develop a psoriatic stripe at the site of a scratch. It does *not* refer to the inoculation of virus and subsequent development of warts in a scratch, as inferred on pp. 10 and 170. The use of xylol or clove oil as an aid to the examination of plantar warts is not mentioned. The prevalent confusion between 'suck' and 'suckle' is perpetuated on p. 201: 'Direct infection can also occur, as when a previously infected ewe is suckled by an infected lamb'. South Africans will be pained or flattered (as the case may be) to observe that G. H. Findlay has been confused with G. M. Findlay in the author index.

The book is attractively produced, with well chosen and well produced illustrations. The colour plates are outstanding and an object lesson which some publishers might well study.

YELLOW FEVER VACCINATION

Yellow Fever Vaccination. By K. C. Smithburn, C. Durieux, R. Koerber, H. A. Penna, G. W. A. Dick, G. Courtois, C. de Souza Manso, G. Stuart and P. H. Bonnel. (1956. Pp. 231 + Index. With Figs. and Tables. 25s.) Geneva: World Health Organization.

First applied in French West Africa in 1934, and then in Brazil in 1937, systematic vaccination against yellow fever has immunized tens of millions of persons, and human yellow fever has become a rare disease. When vaccination was begun, however, not even its most optimistic advocates could have anticipated all the benefits and the enormous economic and social advantages that would accrue to those territories where the disease was rife.

The World Health Organization considered that it would be appropriate at this stage to publish a monograph to which would contribute eminent specialists whose names are linked with the success of yellow fever control the world over.

In the first section Smithburn describes the basis on which yellow fever immunization now rests.

In French West Africa and French Equatorial Africa more than 56 million vaccinations were performed between 1939 and 1953 with the scratch vaccine prepared by the Institut Pasteur at Dakar; these have resulted in a protection rate such that human yellow fever has virtually disappeared from the territories in which vaccination was performed. Durieux, formerly Director of the Institut Pasteur at Dakar, describes the preparation and control of the vaccine produced by that Institute, the technique of its administration, and the system of mass vaccination applied in French African territories. Together with Koerber he discusses the immunological results obtained.

The most widely used vaccine in the rest of the world is 17D vaccine. The Oswaldo Cruz Institute at Rio de Janeiro is one of the most important establishments preparing it. Penna, who directs the Institute's yellow fever laboratory, gives details of the production and administration of 17D vaccine which, like that of the Institut Pasteur at Dakar, is used in mass vaccination campaigns. de Souza Manso reports on what has been accomplished with these campaigns in Latin America.

Courtois records the results of numerous control experiments which clarify previous knowledge of the time of appearance of immunity to yellow fever after vaccination and of the duration of that immunity.

Like all vaccination, that against yellow fever has sometimes been followed by more or less serious reactions. It is necessary to know about these accidents and only proper to draw attention to them. They in no way detract from the value and efficacy of the method. Stuart gives a detailed and complete account of reactions observed to vaccinations with both the Dakar and the 17D vaccines.

Each method of vaccination has its advantages and its disadvantages. Vaccination with 17D vaccine by the scarification method (described by Dick) seems to combine the advantages of both Dakar and 17D vaccines without the possible disadvantages of

the more usual ways of administering either.

Vaccination against yellow fever is officially sanctioned as a preventive method by international health legislation, which allows travellers holding a valid certificate of vaccination to avoid quarantine isolation when passing from an area infected with yellow fever to an area receptive to it. Bonnel describes these international regulations and the conditions under which a valid international certificate may be issued.

The monograph also contains a bibliography of works on yellow fever immunology and vaccination.

INSECT VECTORS AND AIR TRAFFIC

Control of Insect Vectors in International Air Traffic: A Survey of Existing Legislation. (Pp. 60. 3s. 6d.) World Health Organization, Geneva.

The insect vectors of diseases such as yellow fever, malaria, filariasis, etc., may be conveyed (sometimes in considerable numbers) by aircraft on international flights.

Although the international sanitary regulations contain certain articles designed to control the spread of communicable diseases by insect vectors in international air traffic, local regulations for preventing the introduction of such vectors into their territories have been adopted by a number of countries.

This WHO study, which is an analytical survey of the regulations for the disinsection of aircraft in 98 States and territories, includes sections dealing with disinsection requirements, when disinsection is carried out, methods of disinsection, formulations of insecticides used, dosage and time of application, measures taken to prevent the spread of agricultural pests, as well as a summary of the recommendations on the disinsection of aircraft made to the Organization by its Expert Committees.

CORRESPONDENCE

REHABILITATION ASSOCIATION FOR INJURED WORKMEN

WORKMEN'S REHABILITATION CENTRE

To the Editor: I have much pleasure in advising you that the Rehabilitation Association for Injured Workmen has established the 'Workmen's Rehabilitation Centre' at 15 Esselen Street (Corner King George Street), Hospital Hill, Johannesburg, which provides full hospital treatment and physical rehabilitative facilities for European workmen undergoing medical treatment for injuries sustained in accidents which are acceptable under the Workmen's Compensation Act. This Centre is entirely independent and is not controlled by any hospital, nursing home, private hospital or nursing institution.

The Rehabilitation Association for Injured Workmen is a non-profit company registered under the Companies Act, and representatives of insurance carriers under the Act, including the Workmen's Compensation Commissioner, serve on its Board of Directors.

The Centre has been designed especially to cater for serious traumatic cases which would normally entail lengthy absences from work and/or result in serious permanent disablement, the object being to reduce as far as possible the period of temporary disablement as well as the resultant degree of permanent disablement. In other words, the aim of the Association is to restore the injured worker as nearly as possible to his pre-accident productive capacity as soon as possible. This will operate to the economic and social advantage not only of the worker himself but also of the employer and the community as a whole.

The injured workman has free choice of doctor. Any doctor who wishes to admit a Workmen's Compensation patient to the Centre should contact the Medical Administrator or his Deputy by telephone (44-9101).

When an injured workman admitted to the Centre has not yet selected his own doctor and is not in a fit state to do so, a practitioner will be nominated by the Medical Association of South Africa (Southern Transvaal Branch) from its own panel of doctors, to take charge of the case.

In addition to up-to-date theatre and other facilities, the Centre also provides facilities for:

(a) Physiotherapy;
(b) Occupational therapy;
(c) Gymnastic and remedial exercises;
(d) In-patient and out-patient treatment;
(e) Socio-economic guidance.

The Association's Secretariat at the Centre will maintain close contact with insurance carriers under the Workmen's Compensation Act in regard to cases admitted to the Centre, and will ensure, *inter alia*, that:

i. Assistance will be given to doctors in maintaining records;

ii. A secretarial service is made available to those medical men who have patients at the Centre, and who wish to dictate notes.

Regular clinical meetings will be arranged by the Medical Administrator to discuss clinical problems brought to the meeting by doctors treating cases at the Centre. These meetings will be attended voluntarily by practitioners, and all doctors are welcome to attend.

No attempt will be made to impose upon any doctor any direction about how he should deal with his case. He will be left complete clinical discretion in handling the problems of the patient. He is entitled to exercise his discretion and choice in consulting any other colleague, including specialists in physical medicine, radiologists, etc.

A medical representative of the Workmen's Compensation Commissioner's office, Pretoria, will be in attendance at these meetings, to assist medical practitioners in medical matters relating to the condition of the injured workman. By this liaison with medical men, the assessment of the degree of disability will be materially facilitated.

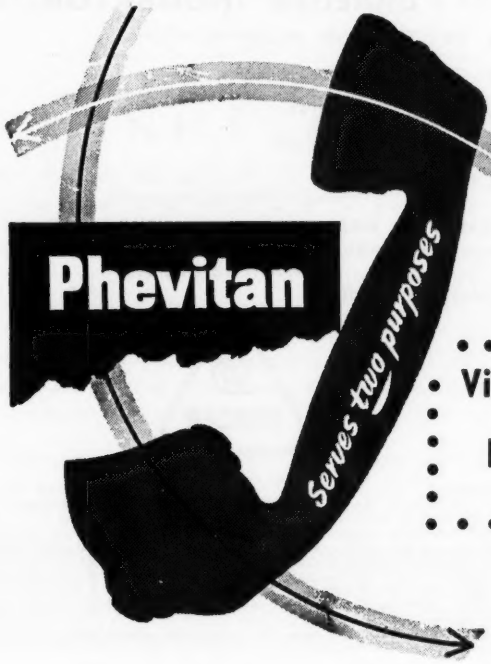
The Medical Administrator of the Centre, Dr. Boris Serebro, in an administrative and non-clinical capacity, will be available to supply information, and answer queries on all the aspects and activities of the Centre.

Doctors' accounts should, as in the past, be rendered to the employer concerned, as the Association is not responsible for the payments of medical fees.

Your kind co-operation and support will be much appreciated.

J. P. GROBBELAAR,
Chairman.

Rehabilitation Association for Injured Workmen,
Corner of Esselen and King George Sts.,
Johannesburg.



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MEDICAL PUBLICATIONS

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Dr. Louis Franklin Freed: The Problem of European Prostitution in Johannesburg .. .. **40s.**

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